



Test Report No:
3919ERM.005

Partial Test report

**USA FCC Part 15.207, 15.209, 15.247, 15.249, 15.407, Part 90
CANADA RSS-Gen, RSS-140, RSS-210, RSS-247**

(*) Identification of item tested	Alarm Control Panel with integrated security and automation support
(*) Trademark	JCI/TYCO
(*) Model and /or type reference	IQ Pro
Other identification of the product	FCC ID: F5322IQPRO IC ID: 160A-IQPRO; HVIN: IQ Pro Hw version: QB94Hx Rev. 0C / UA746 Rev. 01 Sw version: 4.2.0n
(*) Features	Wi-Fi 2.4GHz/5GHz, BLE, PowerG, Z-Wave, LTE
Manufacturer	Tyco Safety Products Canada Ltd. 3301 Langstaff Rd., Concord, ON L4K 4L2 Canada
Test method requested, standard	USA FCC Part 15.247, 10-1-20 Edition: Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz USA FCC Part 15.249 10-1-20 Edition: Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, 5725 - 5875 MHz, and 24.0 – 24.25 GHz. USA FCC Part 15.407 10-1-20 Edition: Unlicensed National Information Infrastructure Devices. General technical requirements. USA FCC Part 15.209 10-1-20 Edition: Radiated emission limits; general requirements. CANADA RSS-Gen Issue 5 (April 2018). CANADA RSS-140 Issue 1 (April 2018). CANADA RSS-210 Issue 10 (December 2019). CANADA RSS-247 Issue 2 (February 2017). 47 CFR FCC Part 90 Subpart R FCC KDB 971168 D01 v03r01 Power Meas License Digital Systems FCC KDB 558074 D01 15.247 Meas Guidance v05r02. Guidance for Compliance Measurements on Digital Transmission Systems, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating Under section §15.247 of the FCC Rules ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.
Summary	See Appendix A
Approved by (name / position & signature)	Domingo Galvez EMC&RF Lab Manager
Date of issue	06-01-2023
Report template No	FDT08_23 (* "Data provided by the client")

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Acronyms

Acronym ID	Acronym Description
# of Tx Chains	Number of Transmission Chains
BEL	Band Edge Left
BER	Band Edge Right
DC	Duty Cycle
Freq	Frequency
Freq Rng	Frequency Range
Lvl Meas Pk	Level Pre Measurement Peak
MP	Measurement Point
MU	Medium Utilization Factor
Max EIRP	Maximum Burst EIRP
Max RMS	Maximum Burst RMS
Max Tx Seq	Maximum Transmission Sequence Time
Min Tx Gap	Minimum Transmission Gap Time
Mod	Modulation
Occ Ch BW	Occupied Channel Bandwidth
PSD	Power Spectrum Density
Port	Active Port
T	Temperature
Unwanted Freq	Unwanted Emissions Frequency
Unwanted Lvl	Unwanted Emissions Level

Competences and guarantees

DEKRA Certification Inc. is a testing laboratory accredited by A2LA (The American Association for Laboratory Accreditation), to perform the tests indicated in the Certificate 2764.01

DEKRA Certification Inc. is a testing laboratory competent to carry out the tests described in this report.

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The results presented in this Test Report apply only to the particular item under test established in this document.

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1. This report is only referred to the item that has undergone the test.
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4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Certification Inc. and the Accreditation Bodies.

Uncertainty

Uncertainty (factor $k=2$) was calculated according to the DEKRA Certification internal document PODT000.

Test case	Frequency (MHz)	U ($k=2$)	Units
Radiated Spurious Emission	30-180	4.27	dB
	180-1000	3.14	dB
	1000-18000	3.30	dB
	18000-40000	3.49	dB

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").
2. The sample consists of The Alarm Control Panel supports wireless and wired initiating devices, communication with supervising station using cellular LTE and Ethernet communication paths. There are two configurations available: IQ Pro using metal enclosure and IQ Pro P using plastic enclosure, only differences are the use of antennas mounted outside the metal enclosure.

DEKRA declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples undergoing test have been selected by: The client.

Sample S/01 is composed of the following elements, accessories and auxiliary equipment:

Id	Control Number	Description	Manufacturer/ Model	Serial N°	Date of Reception	Application
S/01	3919/05	Sample + AC Adapter	JCI - Tyco. / IQ Pro	QPR005A002235B00022M00	01/31/2023	Element Under Test

1. Sample S/01 was used for the test(s): All test(S) indicated in appendix A.

Test sample description

Test Sample description (compulsory information for EMC and RF testing services)

Ports..... :	Port name and description		Cable				
			Specified length [m]	Attached during test	Shielded	Coupled to patient	
	18Vdc+/- (DC input)		6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	BELL +/- (Bell output)		6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	CORBUS (RED/BLK/YEL/GRN) (System communication bus)		6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	AUX1/AUX2 +/- (two auxiliary power outputs)		6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	PGM1-PGM4 (four programmable outputs)		6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Z1/COM- Z8/COM (Eight zone Inputs)		6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Supplementary information to the ports..... :	Use quad wires, 22AWG connected to all ports on UA746 Rev. 01						
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	<input checked="" type="checkbox"/>	AC: 120Vac/60Hz	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	AC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	DC: 18Vdc/2.2A					
<input type="checkbox"/>	DC:						
Rated Power	40W						
Clock frequencies	12MHz, 24MHz, 39MHz						
Other parameters.....	No Data Provided						
Software version	4.2.0n						
Hardware version.....	QB94Hx Rev. 0C/UA746 Rev. 01						
Dimensions in cm (W x H x D).....	34 x 48 x 12.5						
Mounting position..... :	<input type="checkbox"/>	<i>Table top equipment</i>					
	<input checked="" type="checkbox"/>	<i>Wall/Ceiling mounted equipment</i>					
	<input type="checkbox"/>	<i>Floor standing equipment</i>					
	<input type="checkbox"/>	<i>Hand-held equipment</i>					
	<input type="checkbox"/>	<i>Other:</i>					
Modules/parts	Module/parts of test item		Type		Manufacturer		
	QB94Hx Rev. 0C (motherboard)		PCB		Tyco		
	UA746 Rev. 01 (hardwired zone inputs)		PCB		Tyco		
	UA757 Rev. 01/UA758 Rev. 02 (PSU/connections)		PCB		Tyco		
	UA762 Rev. 02 (external antennas board)		PCB		Tyco		

Accessories (not part of the test item)..... :	Description	Type	Manufacturer
	Power Adapter HS40WPSNA	Power Adapter	SOY
	The product shall be tested for conducted emissions in conjunction with this adapter		
Documents as provided by the applicant	Description	File name	Issue date
	Declaration Equipment Data	FDT30_18 Declaration Equipment Data signed	04/12/2023
	Block Diagram and Technical Description		
	Parts List		
	Schematics		
	FCC/ISED applications		

Copy of marking plate:



Identification of the client

Tyco Safety Products Canada Ltd.
 3301 Langstaff Rd., Concord,
 ON L4K 4L2,
 Canada

Testing period and place

Test Location	DEKRA Certification Inc.
Date (start)	05-17-2023
Date (finish)	05-30-2023

Document history

Report number	Date	Description
3919ERM.005	06-01-2023	First release

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the semi-anechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 60 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

Remarks and comments

The tests have been performed by the technical personnel: Qi Zhang, Koji Nishimoto, and Victor Albrecht.

Testing verdicts

Fail	F
Not applicable	N/A
Not measured	N/M
Pass	P

Summary

FCC PART 15 PARAGRAPH / RSS-247 (Bluetooth EDR)		
Requirement – Test case	Verdict	Remark
FCC 15.247 (a) (1) / RSS-247 5.1 (b) - 20 dB Bandwidth	N/M	Refer 1
FCC 2.1049 / RSS-GEN 6.7 - 99dBw Occupied Channel Bandwidth 99%	N/M	Refer 1
FCC 15.247 (a) (1) / RSS-247 5.1 (b) - Carrier Frequency Separation	N/M	Refer 1
FCC 15.247 (a) (1) (iii) / RSS-247 5.1 (d) - Time of Occupancy (Dwell Time)	N/M	Refer 1
FCC 15.247 (a) (1) (iii) / RSS-247 5.1 (d) - Number of hopping channels	N/M	Refer 1
FCC 15.247 (b) (3)/ RSS-247 5.4 (d) - Maximum Peak Conducted output power & Antenna gain	N/M	Refer 1
FCC 15.247 (d) / RSS-247 5.5 - Band-edge emissions compliance (Transmitter) - Conducted	N/M	Refer 1
FCC 15.247 (d) / RSS-247 5.2 (b) - Power Spectral Density	N/M	Refer 1
FCC 15.247 (d) / RSS-247 5.5 - Emissions compliance (Transmitter) - Conducted	N/M	Refer 1
FCC 15.247 (d) / RSS-247 5.5 - Emissions compliance (Transmitter) - Radiated	P	-
<u>Supplementary information and remarks:</u>		
1. Only multi-transmitter radiated spurious emission test was requested.		

FCC PART 90 PARAGRAPH / RSS-140 (Cellular)		
Requirement – Test case	Verdict	Remark
FCC 2.1046 and 90.542 - RF Output power	N/M	Refer 1
FCC 2.1055 and 90.539 - Frequency stability	N/M	Refer 1
FCC 2.1049 and 90.209 (7) - Occupied Bandwidth	N/M	Refer 1
FCC 2.1053 and 90.543 - Spurious emissions at antenna terminals	N/M	Refer 1
FCC 90.531 (g) / 90.543 - Spurious emissions at antenna terminals at Block edges	N/M	Refer 1
FCC 2.1053 and 90.543 - Radiated emissions	P	-
<u>Supplementary information and remarks:</u>		
1. Only multi-transmitter radiated spurious emission test was requested.		

FCC PART 15 PARAGRAPH / RSS-247 (Wi-Fi 2.4GHz)		
Requirement – Test case	Verdict	Remark
FCC 2.1049 / RSS-GEN 6.7 - 99dBw Occupied Channel Bandwidth 99%	N/M	Refer 1
FCC 15.247 (a) (2) / RSS-247 5.2 (a) - 6dB Bandwidth	N/M	Refer 1
FCC 15.247 (b) (3) / RSS-247 5.4 (d) - Maximum Peak Conducted output power & Antenna gain	N/M	Refer 1
FCC 15.247 (d) / RSS-247 5.5 - Band-edge emissions compliance (Transmitter) - Conducted	N/M	Refer 1
FCC 15.247 (d) / RSS-247 5.2 (b) - Power Spectral Density	N/M	Refer 1
FCC 15.247 (d) / RSS-247 5.5 - Emissions compliance (Transmitter) - Conducted	N/M	Refer 1
FCC 15.247 (d) / RSS-247 5.5 - Emissions compliance (Transmitter) - Radiated	Pass	N/A
<u>Supplementary information and remarks:</u>		
1. Only multi-transmitter radiated spurious emission test was requested.		

FCC PART 15 PARAGRAPH / RSS-247 (Wi-Fi 5GHz)		
Requirement – Test case	Verdict	Remark
FCC 15.407 (a) / RSS-247 6.2 - Power Limits. Maximum Output Power	N/M	Refer 1
FCC 15.407 (a) / RSS-247 6.2 - Maximum Power Spectral Density	N/M	Refer 1
FCC 2.1049 / RSS-Gen 6.7 - 99% Occupied Bandwidth	N/M	Refer 1
FCC 15.403 / RSS-Gen 6.7 - 26 dB Emission Bandwidth	N/M	Refer 1
FCC 15.407 (b) / RSS-247 6.2 - Band-edge Conducted Emissions	N/M	Refer 1
FCC 15.407 (e) / RSS 247 6.2.4.1 - 6 dB Emission Bandwidth	N/M	Refer 1
FCC 15.407 (b), 15.205 & 15.209 / RSS-Gen 8.9 & 8.10 - Undesirable radiated emissions	Pass	N/A
<u>Supplementary information and remarks:</u>		
1. Only multi-transmitter radiated spurious emission test was requested.		

FCC PART 15 PARAGRAPH / RSS-210 (Z-wave & Power G)		
Requirement – Test case	Verdict	Remark
FCC 2.1049 / RSS-GEN 6.7 - 99dBw Occupied Channel Bandwidth 99%	N/M	Refer 1
FCC 15.249 (a) / RSS-210 B.10 (a) - Field Strength of fundamental	N/M	Refer 1
FCC 15.249 (d) / RSS-210 B.10 (b) - Emission limitations radiated (Transmitter)	P	-
<u>Supplementary information and remarks:</u>		
1. Only multi-transmitter radiated spurious emission test was requested.		

List of equipment used during the test

Test Equipments for RE

Control Num	Equipment	Manufacturer	Serial	Model	Next calibration
878	DC Power supply	Ametek Prog	1707A01783	#N/A	#N/A
1012	ESR26 EMI Test Receiver	Rohde & Schwarz	101478	ESR26	2025-01-18
1014	FSV40 Signal Analyzer 40GHz	Rhode & Schwarz	101626	FSV40	2024-08-01
1056	3116C Double-Ridged Waveguide Horn Antenna 18-40 GHz	Ets Lindgren	213179	3116C	2026-02-23
1057	3115 Double-Ridged Waveguide Horn Antenna 1-18 GHz	Ets Lindgren	211373	1908-07-11	2023-06-03
1065	3142E Biconilog Antenna	Ets Lindgren	208587	3142E	2023-08-13
1108	Ethernet SNMP Thermometer- CR Room	Hw Group	60038026954	HWg-STE Plain	2024-10-18
1111	Ethernet SNMP Thermometer- SAC	Hw Group	60038026577	HWg-STE Plain	2024-10-18
1179	Semi-Anechoic Chamber	Frankonia	F169021	SAC 3plus 'L'	N/A
1314	Wireless Measurement Software R&S EMC32	Rohde & Schwarz	1040- OT102236	-	N/A

Appendix A: FCC Multi-transmitters Test Results

Appendix A Content

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PRODUCT INFORMATION

The following information is provided by the supplier

Information	Description
Modulation	FHSS
Operation mode	
- Operating Frequency Range	908-916 MHz
- RF Output Power	14 dBm
Extreme operating conditions	
- Temperature range	25 °C
Antenna type	Integral Antenna
Antenna gain	+1.7 dBi
Nominal Voltage	
- Supply Voltage	18 Vdc
- Type of power source	DC Voltage
Equipment type	Z-wave

TEST CONDITIONS

TEST CONDITIONS	DESCRIPTION																									
TC/01 ⁽¹⁾	<p>Power supply (V): 18 Vdc</p> <p>Test Frequencies for Radiated tests:</p> <table border="1"> <thead> <tr> <th>Technology</th> <th>Tested Frequency (MHz)</th> <th>BW (MHz)</th> <th>Modulation</th> <th>Mode</th> </tr> </thead> <tbody> <tr> <td>LTE Band 14</td> <td>793</td> <td>5</td> <td>QPSK</td> <td>12 RB, OFFSET 11</td> </tr> <tr> <td>Z-Wave</td> <td>908.4</td> <td>0.143</td> <td>GFSK</td> <td>--</td> </tr> <tr> <td>PowerG</td> <td>916</td> <td>0.100</td> <td>GFSK</td> <td>--</td> </tr> <tr> <td>Wi-Fi 2.4 GHz</td> <td>2437</td> <td>40</td> <td>OFDM</td> <td>n mode</td> </tr> </tbody> </table> <p>The test was performed with the equipment transmitting with Cellular, Z-wave, Power-G and Wi-Fi 2.4GHz radios simultaneously. These measurements have been performed in order to check the impact of the multi-transmitter of all radio interfaces that can be transmitting simultaneously.</p>	Technology	Tested Frequency (MHz)	BW (MHz)	Modulation	Mode	LTE Band 14	793	5	QPSK	12 RB, OFFSET 11	Z-Wave	908.4	0.143	GFSK	--	PowerG	916	0.100	GFSK	--	Wi-Fi 2.4 GHz	2437	40	OFDM	n mode
Technology	Tested Frequency (MHz)	BW (MHz)	Modulation	Mode																						
LTE Band 14	793	5	QPSK	12 RB, OFFSET 11																						
Z-Wave	908.4	0.143	GFSK	--																						
PowerG	916	0.100	GFSK	--																						
Wi-Fi 2.4 GHz	2437	40	OFDM	n mode																						
TC/02 ⁽¹⁾	<p>Power supply (V): 18 Vdc</p> <p>Test Frequencies for Radiated tests:</p> <table border="1"> <thead> <tr> <th>Technology</th> <th>Tested Frequency (MHz)</th> <th>BW (MHz)</th> <th>Modulation</th> <th>Mode</th> </tr> </thead> <tbody> <tr> <td>LTE Band 14</td> <td>793</td> <td>5</td> <td>QPSK</td> <td>12 RB, OFFSET 11</td> </tr> <tr> <td>Z-Wave</td> <td>908.4</td> <td>0.143</td> <td>GFSK</td> <td>--</td> </tr> <tr> <td>PowerG</td> <td>916</td> <td>0.100</td> <td>GFSK</td> <td>--</td> </tr> <tr> <td>Wi-Fi 5 GHz</td> <td>5670</td> <td>40</td> <td>OFDM</td> <td>n mode</td> </tr> </tbody> </table> <p>The test was performed with the equipment transmitting with Cellular, Z-wave, Power-G and Wi-Fi 5GHz radios simultaneously. These measurements have been performed in order to check the impact of the multi-transmitter of all radio interfaces that can be transmitting simultaneously.</p>	Technology	Tested Frequency (MHz)	BW (MHz)	Modulation	Mode	LTE Band 14	793	5	QPSK	12 RB, OFFSET 11	Z-Wave	908.4	0.143	GFSK	--	PowerG	916	0.100	GFSK	--	Wi-Fi 5 GHz	5670	40	OFDM	n mode
Technology	Tested Frequency (MHz)	BW (MHz)	Modulation	Mode																						
LTE Band 14	793	5	QPSK	12 RB, OFFSET 11																						
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TC/03 ⁽¹⁾	<p>Power supply (V): 18 Vdc</p> <p>Test Frequencies for Radiated tests:</p> <table border="1"> <thead> <tr> <th>Technology</th> <th>Tested Frequency (MHz)</th> <th>BW (MHz)</th> <th>Modulation</th> <th>Mode</th> </tr> </thead> <tbody> <tr> <td>LTE Band 14</td> <td>793</td> <td>5</td> <td>QPSK</td> <td>12 RB, OFFSET 11</td> </tr> <tr> <td>Z-Wave</td> <td>908.4</td> <td>0.143</td> <td>GFSK</td> <td>--</td> </tr> <tr> <td>PowerG</td> <td>916</td> <td>0.100</td> <td>GFSK</td> <td>--</td> </tr> <tr> <td>BLE 2.4 GHz</td> <td>2402</td> <td>2</td> <td>GFSK</td> <td>1 mbps</td> </tr> </tbody> </table> <p>The test was performed with the equipment transmitting with Cellular, Z-wave, Power-G and BLE radios simultaneously. These measurements have been performed in order to check the impact of the multi-transmitter of all radio interfaces that can be transmitting simultaneously.</p>	Technology	Tested Frequency (MHz)	BW (MHz)	Modulation	Mode	LTE Band 14	793	5	QPSK	12 RB, OFFSET 11	Z-Wave	908.4	0.143	GFSK	--	PowerG	916	0.100	GFSK	--	BLE 2.4 GHz	2402	2	GFSK	1 mbps
Technology	Tested Frequency (MHz)	BW (MHz)	Modulation	Mode																						
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Z-Wave	908.4	0.143	GFSK	--																						
PowerG	916	0.100	GFSK	--																						
BLE 2.4 GHz	2402	2	GFSK	1 mbps																						

Note (1): The following tables and plots show the results for the worst case in LTE, Z-Wave, Power G, BLE, Wi-Fi 2.4 GHz, and Wi-Fi 5 GHz

TEST A.1: EMISSION LIMITATIONS RADIATED (TRANSMITTER)

LIMITS:	Product standard:	USA FCC Part 15.207, 15.209, 15.247, 15.249, 15.407, Part 90 CANADA RSS-247, RSS-210, RSS-140, RSS-Gen
	Test standard:	USA FCC Part 15.207, 15.209, 15.247, 15.249, 15.407, Part 90 CANADA RSS-247, RSS-210, RSS-140, RSS-Gen

LIMITS

Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c) / RSS-Gen):

Frequency Range (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
960 - 25000	500	54	3

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

TEST SETUP

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna is situated at 3 m for the frequency range 30-1000 MHz (Bilog antenna) and 1-18 GHz (Double ridge horn antenna), and 1m for the frequency range 18 GHz- 40 GHz (Double ridge horn antenna).

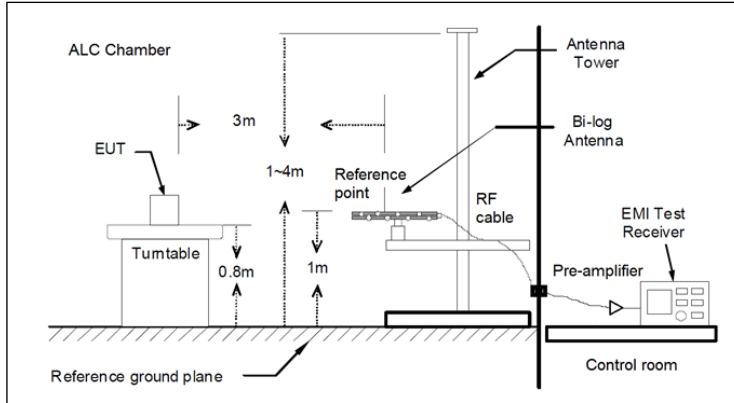
For radiated emissions in the range 18 - 40 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

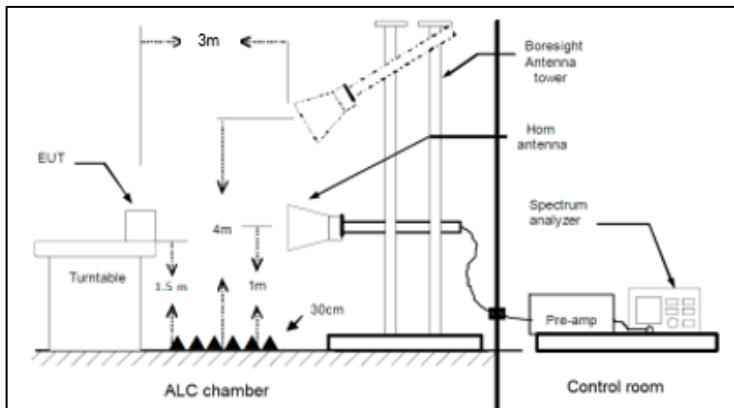
Measurements were made in both horizontal and vertical planes of polarization.

The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

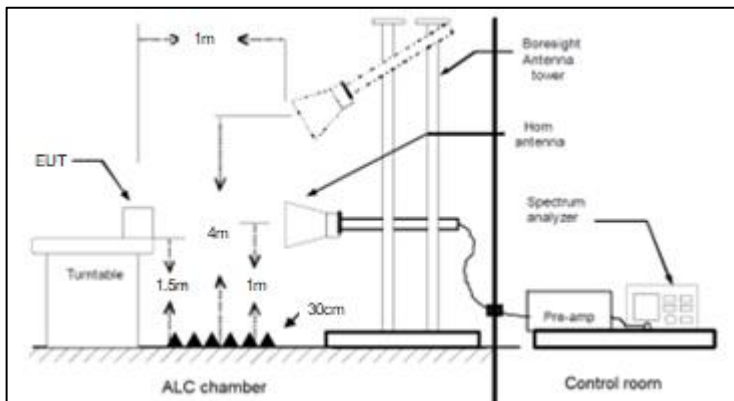
TEST SETUP (CONT.)



Radiated measurements Setup $f < 1$ GHz



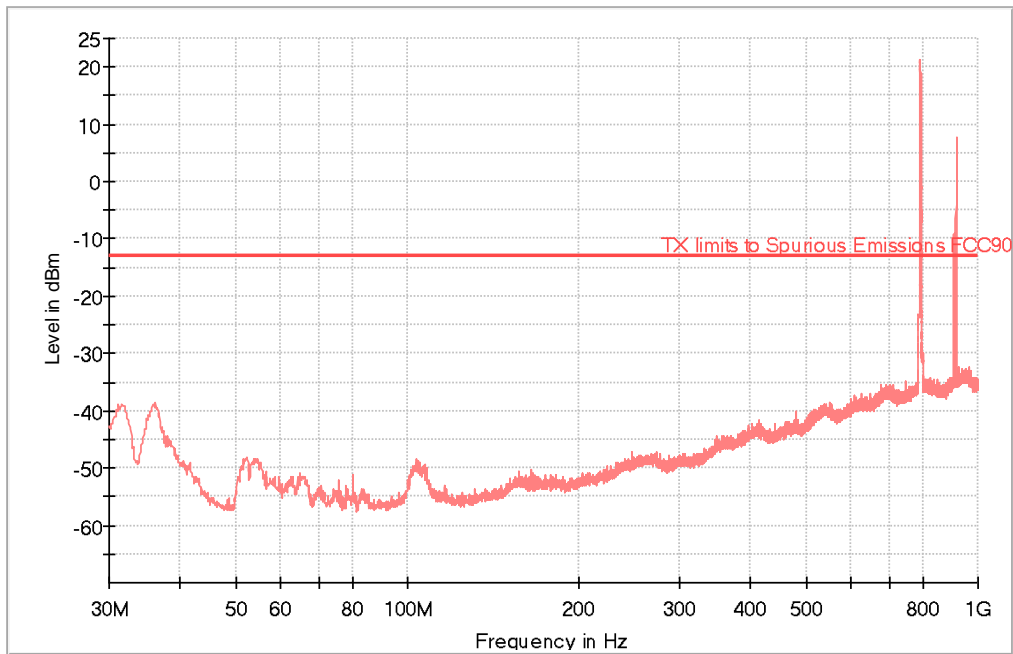
Radiated measurements setup $f > 1-18$ GHz



Radiated measurements setup $f > 18$ GHz

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC/01
TEST RESULTS :	0.030 - 1 GHz
VERDICT:	PASS

Frequency range 30 MHz – 1000 MHz

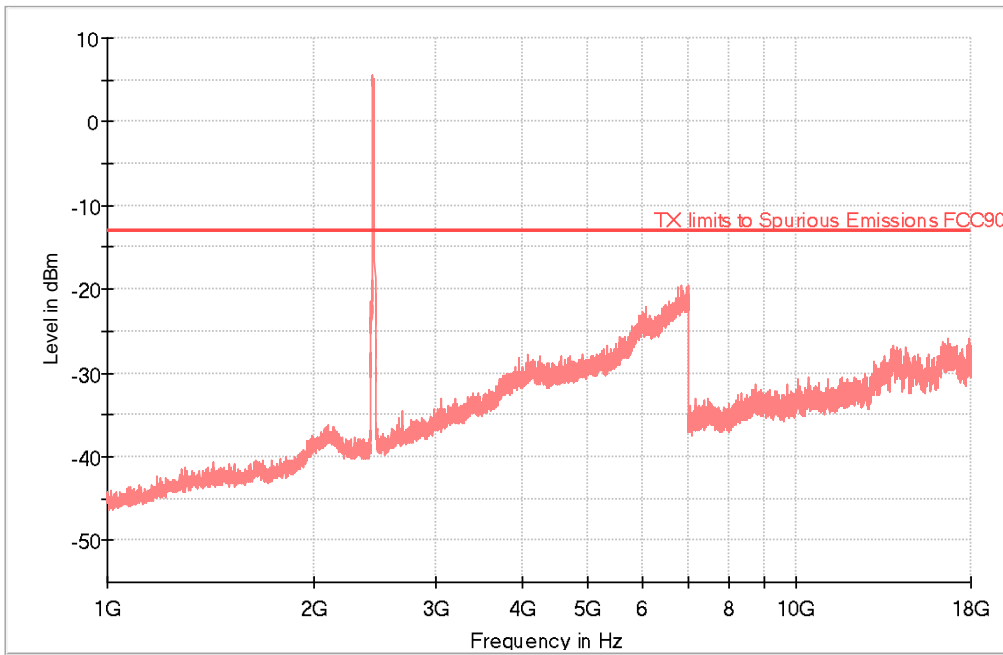


— PK+_MAXH — TX limits to Spurious Emissions FCC90

Frequency (MHz)	PK+_MAXH (dBm)	Pol	Margin - PK+ (dB)	Limit - PK+ (dBm)	Comment
36.208000	-38.7	V	25.7	-13.0	
103.817000	-48.3	V	35.3	-13.0	
792.711000	21.4	V	---	---	LTE Uplink Fundamental
908.432000	-9.0	H	---	---	Z-Wave Fundamental
915.804000	7.7	H	---	---	PowerG Fundamental
923.467000	-32.2	H	19.2	-13.0	

TEST RESULTS (Cont.):

1 - 18 GHz

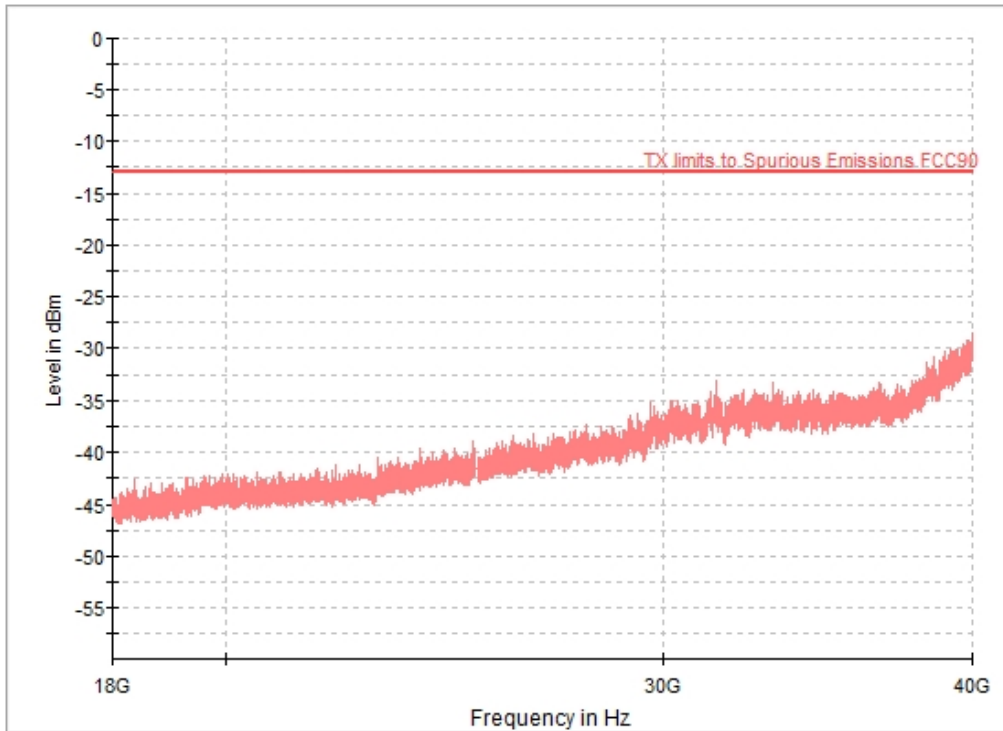


— PK+_MAXH — TX limits to Spurious Emissions FCC90

Frequency (MHz)	PK+_MAXH (dBm)	Pol	Margin - PK+ (dB)	Limit - PK+ (dBm)	Comment
2430.000000	5.7	H	---	---	WiFi 2.4 Fundamental
6979.000000	-19.6	H	6.6	-13.0	
17847.000000	-25.9	V	12.9	-13.0	

TEST RESULTS (Cont.):

18 - 40 GHz



PK+_MAXH TX limits to Spurious Emissions FCC90

Frequency (MHz)	PK+_MAXH (dBm)	Pol	Margin - PK+ (dB)	Limit - PK+ (dBm)
31495.625000	-33.1	V	27.4	-13.0

Spectrum Analyzer Parameters

Subrange	Detectors	Bandwidth	Preamp
30 MHz - 1 GHz	PK+	100 kHz	20 dB

Spectrum Analyzer Parameters

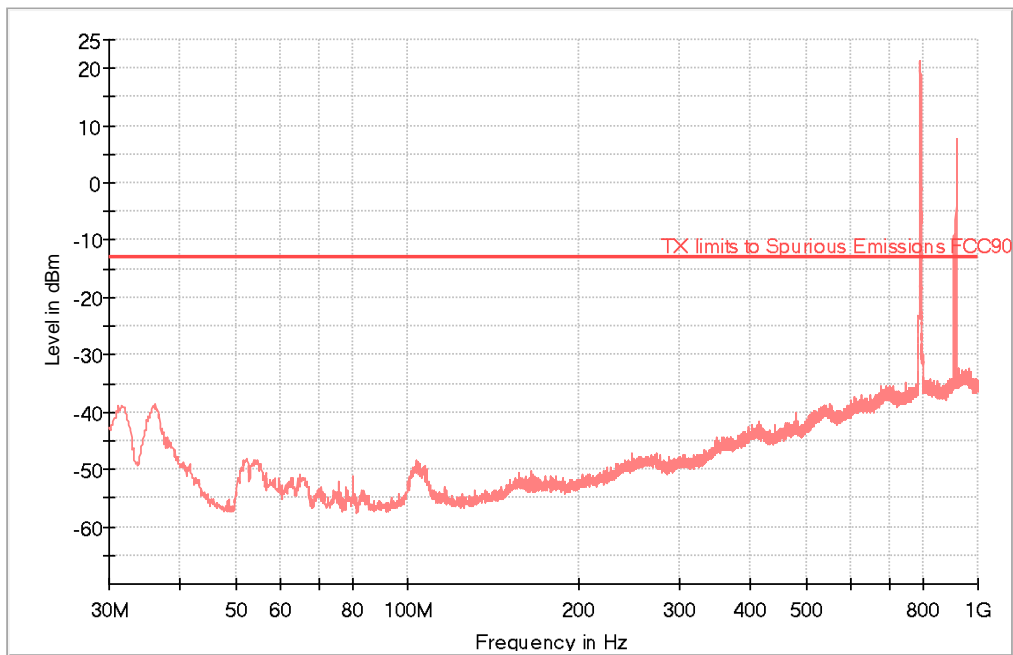
Subrange	Detectors	Bandwidth	Preamp
1 GHz - 7 GHz	PK+ ; AVG	1 MHz	20 dB
7 GHz - 18 GHz	PK+ ; AVG	1 MHz	20 dB

Spectrum Analyzer Parameters

Subrange	Detectors	Bandwidth	Preamp
18 GHz - 40 GHz	PK+ ; AVG	1 MHz	20 dB

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC/02
TEST RESULTS :	0.030 - 1 GHz
VERDICT:	PASS

Frequency range 30 MHz – 1000 MHz

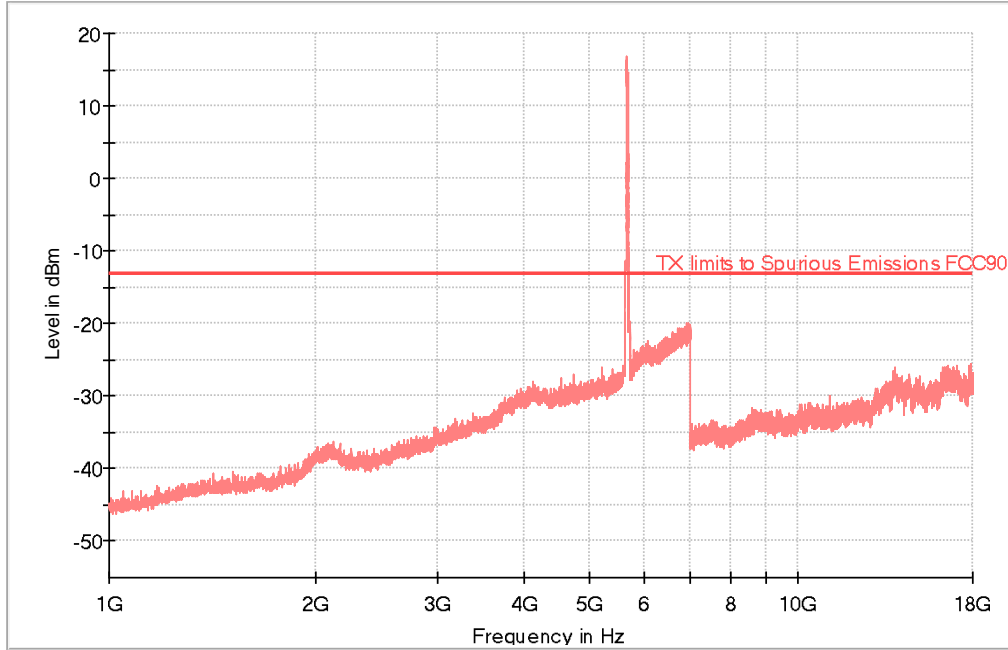


— PK+_MAXH — TX limits to Spurious Emissions FCC90

Frequency (MHz)	PK+_MAXH (dBm)	Pol	Margin - PK+ (dB)	Limit - PK+ (dBm)	Comment
36.208000	-38.7	V	25.7	-13.0	
103.817000	-48.3	V	35.3	-13.0	
792.711000	21.4	V	---	---	LTE Uplink Fundamental
908.432000	-9.0	H	---	---	Z-Wave Fundamental
915.804000	7.7	H	---	---	PowerG Fundamental
923.467000	-32.2	H	19.2	-13.0	

TEST RESULTS :

1 - 18 GHz

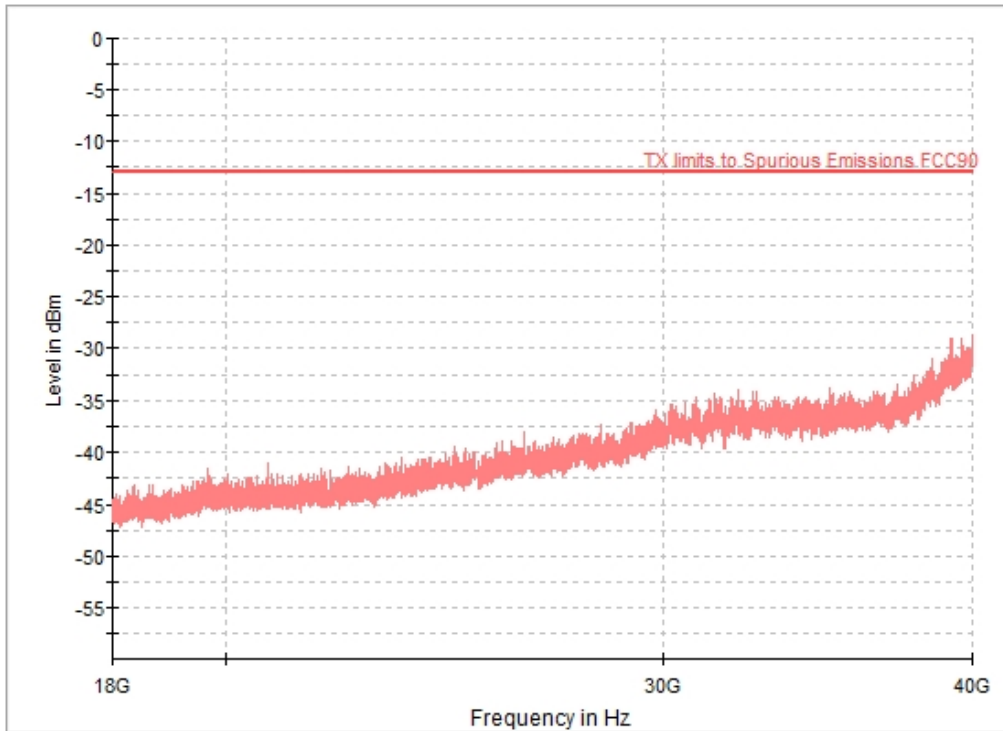


PK+_MAXH TX limits to Spurious Emissions FCC90

Frequency (MHz)	PK+_MAXH (dBm)	Pol	Margin - PK+ (dB)	Limit - PK+ (dBm)	Comment
5657.000000	16.8	H	---	---	WiFi 5G Fundamental
6961.000000	-19.8	H	6.8	-13.0	
17867.000000	-25.6	H	12.6	-13.0	

TEST RESULTS (Cont.):

18 - 40 GHz



PK+_MAXH TX limits to Spurious Emissions FCC90

Frequency (MHz)	PK+_MAXH (dBm)	Pol	Margin - PK+ (dB)	Limit - PK+ (dBm)
39170.875000	-29.1	V	23.4	-13.0

Spectrum Analyzer Parameters

Subrange	Detectors	Bandwidth	Preamp
30 MHz - 1 GHz	PK+	100 kHz	20 dB

Spectrum Analyzer Parameters

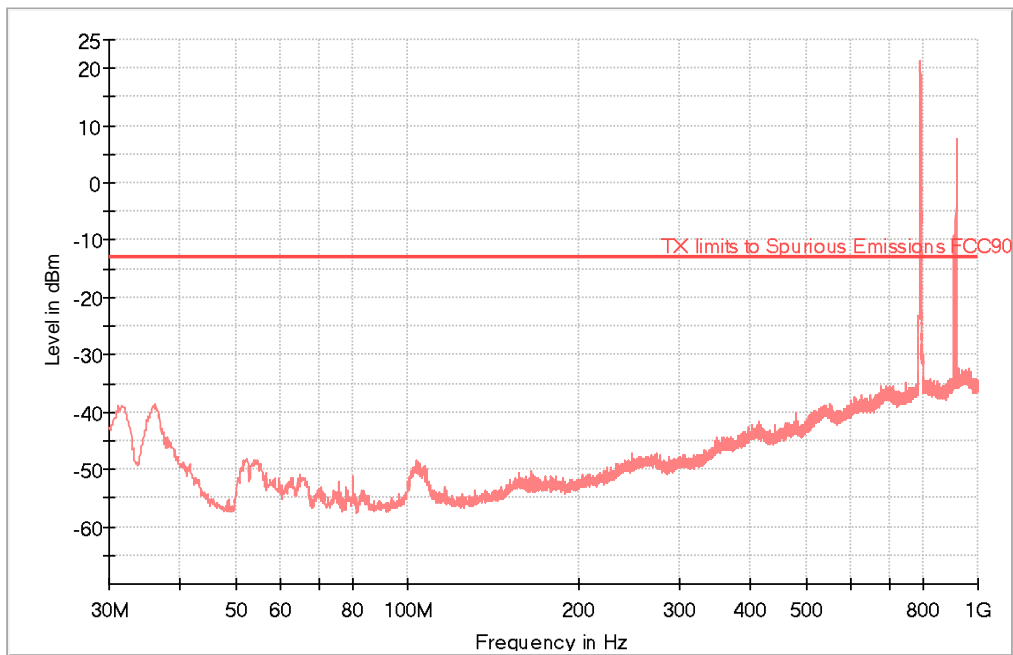
Subrange	Detectors	Bandwidth	Preamp
1 GHz - 7 GHz	PK+ ; AVG	1 MHz	20 dB
7 GHz - 18 GHz	PK+ ; AVG	1 MHz	20 dB

Spectrum Analyzer Parameters

Subrange	Detectors	Bandwidth	Preamp
18 GHz - 40 GHz	PK+ ; AVG	1 MHz	20 dB

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC/03
TEST RESULTS :	0.030 - 1 GHz
VERDICT:	PASS

Frequency range 30 MHz – 1000 MHz

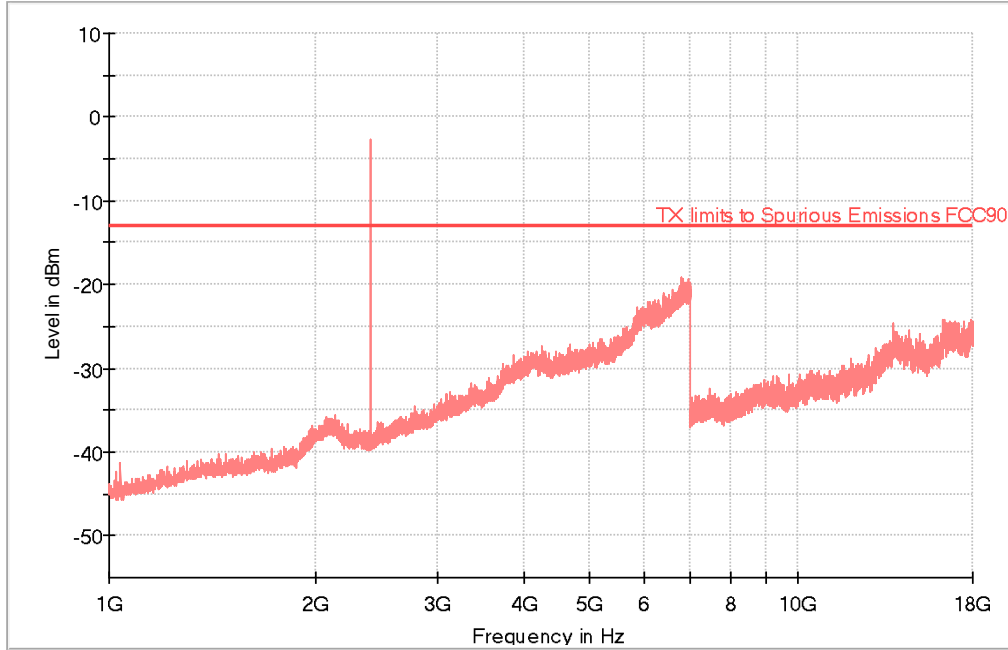


— PK+_MAXH — TX limits to Spurious Emissions FCC90

Frequency (MHz)	PK+_MAXH (dBm)	Pol	Margin - PK+ (dB)	Limit - PK+ (dBm)	Comment
36.208000	-38.7	V	25.7	-13.0	
103.817000	-48.3	V	35.3	-13.0	
792.711000	21.4	V	---	---	LTE Uplink Fundamental
908.432000	-9.0	H	---	---	Z-Wave Fundamental
915.804000	7.7	H	---	---	PowerG Fundamental
923.467000	-32.2	H	19.2	-13.0	

TEST RESULTS :

1 - 18 GHz

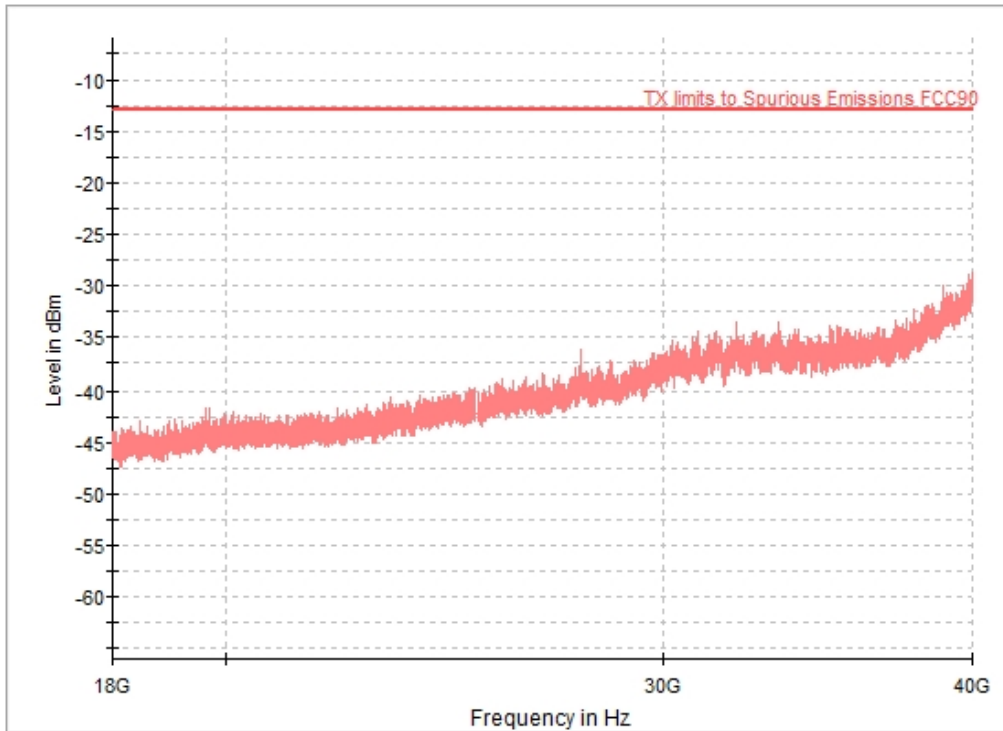


PK+_MAXH TX limits to Spurious Emissions FCC90

Frequency (MHz)	PK+_MAXH (dBm)	Pol	Margin - PK+ (dB)	Limit - PK+ (dBm)	Comment
2402.000000	-2.7	H	---	---	BLE Fundamental
6782.000000	-19.2	V	6.2	-13.0	

TEST RESULTS (Cont.):

18 - 40 GHz



PK+_MAXH TX limits to Spurious Emissions FCC90

Frequency (MHz)	PK+_MAXH (dBm)	Pol	Margin - PK+ (dB)	Limit - PK+ (dBm)
33373.875000	-33.6	H	25.8	-13.0

Spectrum Analyzer Parameters

Subrange	Detectors	Bandwidth	Preamp
30 MHz - 1 GHz	PK+	100 kHz	20 dB

Spectrum Analyzer Parameters

Subrange	Detectors	Bandwidth	Preamp
1 GHz - 7 GHz	PK+ ; AVG	1 MHz	20 dB
7 GHz - 18 GHz	PK+ ; AVG	1 MHz	20 dB

Spectrum Analyzer Parameters

Subrange	Detectors	Bandwidth	Preamp
18 GHz - 40 GHz	PK+ ; AVG	1 MHz	20 dB